### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Mixture</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Product name</td>
<td>ZIPCONE™ FN</td>
</tr>
<tr>
<td>Product code</td>
<td>PP1-ZPFN</td>
</tr>
<tr>
<td>Synonyms</td>
<td>CURE SILICONE; SILOXANES AND SILICONES, (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANO SILICONE</td>
</tr>
</tbody>
</table>

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

- **1.2.1. Relevant identified uses**
  - Use of the substance/mixture: Chemical intermediate

- **1.2.2. Uses advised against**
  - No additional information available

#### 1.3. Details of the supplier of the safety data sheet

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

**GELEST INC.**
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

#### 1.4. Emergency telephone number

- Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids, Category 2</td>
<td>H225</td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation, Category 2</td>
<td>H319</td>
</tr>
<tr>
<td>Specific target organ toxicity — Single exposure, Category 3, Narcosis</td>
<td>H336</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 1</td>
<td>H410</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

**Adverse physicochemical, human health and environmental effects**

No additional information available

#### 2.2. Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

- **Hazard pictograms (CLP)**
  - GHS02
  - GHS07
  - GHS09

- **Signal word (CLP)**: Danger
Hazardous ingredients: n-Heptane


2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients
3.1. Substances
Not applicable
3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>(CAS-No.) 142-82-5 (EC-No.) 205-563-8 (EC Index-No.) 601-008-00-2</td>
<td>64 - 70</td>
<td>Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td>Siloxanes and silicones, (cyclohexylamino)methyl methyl, dimethyl, (cyclohexylamino)methyl terminated</td>
<td>(CAS-No.) 107659-90-5</td>
<td>28 - 35</td>
<td>Not classified</td>
</tr>
<tr>
<td>Cyclohexylamine</td>
<td>(CAS-No.) 108-91-8</td>
<td>1 - 2</td>
<td>Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Repr. 2, H361f</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures
4.1. Description of first aid measures
First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of water/... Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects: Suspected of damaging fertility or the unborn child. May cause genetic defects.
Symptoms/effects after inhalation: May cause drowsiness or dizziness. May cause irritation to the respiratory tract. Heptane can cause vertigo, incoordination and stupor at 5000ppm. Vapor inhalation of heptane may lead to impairment of coordination mental alertness, and reaction times, leading to accident proneness.
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye irritation.
Symptoms/effects after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available
SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture
Fire hazard : Highly flammable liquid and vapour. Irritating fumes of hydrochloric acid and organic acid vapors may develop when material is exposed to water or open flame.
Explosion hazard : May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters
Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures : Eliminate every possible source of ignition. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel
Protective equipment : Wear protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment : For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection. Do not attempt to take action without suitable protective equipment.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Collect spillage. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapour and mist. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.
Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions : Keep container tightly closed. Keep in a cool place. Store locked up.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>EU</th>
<th>EU</th>
<th>Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane (142-82-5)</td>
<td>IOELV TWA (mg/m³)</td>
<td>2085 mg/m³</td>
<td>500 ppm</td>
</tr>
<tr>
<td></td>
<td>IOELV TWA (ppm)</td>
<td>2000 mg/m³ (all isomers)</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>MAK (ppm)</td>
<td>MAK Short time value (mg/m³)</td>
<td>MAK Short time value (ppm)</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Austria</td>
<td>500 ppm (all isomers)</td>
<td>8000 mg/m³ (all isomers)</td>
<td>2000 ppm (all isomers)</td>
</tr>
<tr>
<td>Belgium</td>
<td>Limit value (mg/m³)</td>
<td>1664 mg/m³</td>
<td>Limit value (ppm)</td>
</tr>
<tr>
<td>Belgium</td>
<td>Short time value (mg/m³)</td>
<td>2085 mg/m³</td>
<td>Short time value (ppm)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>OEL TWA (mg/m³)</td>
<td>1600 mg/m³</td>
<td>OEL TWA (mg/m³)</td>
</tr>
<tr>
<td>Cyprus</td>
<td>OEL TWA (ppm)</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>VLE (mg/m³)</td>
<td>2085 mg/m³ (restrictive limit)</td>
<td>VLE (ppm)</td>
</tr>
<tr>
<td>Germany</td>
<td>TRGS 900 Occupational exposure limit value (mg/m³)</td>
<td>2100 mg/m³ (all isomers)</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>TRGS 900 Occupational exposure limit value (ppm)</td>
<td>500 ppm (all isomers)</td>
<td></td>
</tr>
<tr>
<td>Gibraltar</td>
<td>Eight hours mg/m3</td>
<td>2085 mg/m³</td>
<td>Eight hours ppm</td>
</tr>
<tr>
<td>Greece</td>
<td>OEL TWA (mg/m³)</td>
<td>2000 mg/m³</td>
<td>OEL TWA (ppm)</td>
</tr>
<tr>
<td>Greece</td>
<td>OEL STEL (mg/m³)</td>
<td>2000 mg/m³</td>
<td>OEL STEL (ppm)</td>
</tr>
<tr>
<td>Italy</td>
<td>OEL TWA (mg/m³)</td>
<td>2085 mg/m³</td>
<td>OEL TWA (ppm)</td>
</tr>
<tr>
<td>Latvia</td>
<td>OEL TWA (mg/m³)</td>
<td>350 mg/m³</td>
<td>OEL TWA (ppm)</td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
<td>750 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>350 mg/m³</td>
<td>NIOSH REL (TWA) (ppm)</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (ceiling) (mg/m³)</td>
<td>1800 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>2000 mg/m³</td>
<td>OSHA PEL (TWA) (ppm)</td>
</tr>
<tr>
<td>Spain</td>
<td>VLA-ED (mg/m³)</td>
<td>2085 mg/m³ (indicative limit value)</td>
<td>VLA-ED (ppm)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>KZGW (mg/m³)</td>
<td>1600 mg/m³</td>
<td>KZGW (ppm)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>MAK (mg/m³)</td>
<td>1600 mg/m³</td>
<td>MAK (ppm)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Grenswaarde TGG 8H (mg/m³)</td>
<td>1200 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Grenswaarde TGG 15MIN (mg/m³)</td>
<td>1600 mg/m³</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
<td>2085 mg/m³</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (mg/m³)</td>
<td>6255 mg/m³ (calculated)</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Expoziční limity (PEL) (mg/m³)</td>
<td>1000 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (mg/m³)</td>
<td>820 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (ppm)</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
<td>1200 mg/m³</td>
<td>HTP-arvo (8h) (ppm)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (15 min)</td>
<td>2100 mg/m³</td>
<td>HTP-arvo (15 min) (ppm)</td>
</tr>
</tbody>
</table>
8.2. Exposure controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves
Eye protection:
Chemical goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

### SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Liquid. Viscous.</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>Amine.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No additional information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; -20 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>98 °C initial (heptane)</td>
</tr>
<tr>
<td>Flash point</td>
<td>0 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>204 °C (heptane)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Highly flammable liquid and vapour</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>40 mm Hg @ 22°C (heptane)</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>3.45 (heptane)</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.81</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&gt; 60 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water. Reacts with water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>1 - 6.7 vol % (lower; upper: heptane)</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

### SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable in sealed containers stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Cyclohexylamine. Silicon dioxide.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

### n-Heptane (142-82-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Species</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral mouse</td>
<td>5000 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>3000 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>103 g/m³ (Exposure time: 4 h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity information</td>
<td>1000 ppm Inhalation (heptane)-human, TCLo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cyclohexylamine (108-91-8)

<table>
<thead>
<tr>
<th>Test</th>
<th>Species</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>156 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 oral mouse</td>
<td>224 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>320 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>500 mg/kg bodyweight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATE CLP (dermal)</td>
<td>1100 mg/kg bodyweight</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

The volatile byproduct of cure is cyclohexylamine for which human mutagenic data have been reported.

Carcinogenicity : Not classified

### Cyclohexylamine (108-91-8)

<table>
<thead>
<tr>
<th>IARC group</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Not classifiable</td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity : Not classified

STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : The volatile byproduct of cure is cyclohexylamine, which has been reported as toxic.

### Symptoms/effects after inhalation

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### n-Heptane (142-82-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>375 mg/l (Exposure time: 96 h - Species: Cichlid fish)</td>
<td></td>
</tr>
</tbody>
</table>

### Cyclohexylamine (108-91-8)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>44 mg/l Oncorhynchus mykiss (static)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

### n-Heptane (142-82-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>4.66</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available
12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1139
UN-No. (IMDG) : 1139
UN-No. (IATA) : 1139
UN-No. (ADN) : 1139
UN-No. (RID) : 1139

14.2. UN proper shipping name

Proper Shipping Name (ADR) : COATING SOLUTION
Proper Shipping Name (IMDG) : COATING SOLUTION
Proper Shipping Name (IATA) : Coating solution
Proper Shipping Name (ADN) : COATING SOLUTION
Proper Shipping Name (RID) : COATING SOLUTION

Transport document description (ADR) : UN 1139 COATING SOLUTION (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED in heptanes), 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS

Transport document description (IMDG) : UN 1139 COATING SOLUTION (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED in heptanes), 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS

Transport document description (IATA) : UN 1139 Coating solution (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED in heptanes), 3, II, ENVIRONMENTALLY HAZARDOUS

Transport document description (ADN) : UN 1139 COATING SOLUTION (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED in heptanes), 3, II, ENVIRONMENTALLY HAZARDOUS

Transport document description (RID) : UN 1139 COATING SOLUTION (CYCLOHEXYLAMINO)METHYL METHYL, DIMETHYL, (CYCLOHEXYLAMINO)METHYL TERMINATED in heptanes), 3, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3

IMDG
Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3
### IATA
Transport hazard class(es) (IATA) : 3  
Hazard labels (IATA) : 3  

### ADN
Transport hazard class(es) (ADN) : 3  
Danger labels (ADN) : 3  

### RID
Transport hazard class(es) (RID) : 3  
Danger labels (RID) : 3  

### 14.4. Packing group
Packing group (ADR) : II  
Packing group (IMDG) : II  
Packing group (IATA) : II  
Packing group (ADN) : II  
Packing group (RID) : II  

### 14.5. Environmental hazards
Dangerous for the environment : Yes  
Marine pollutant : Yes  
Other information : No supplementary information available  

### 14.6. Special precautions for user
- **Overland transport**
  - Classification code (ADR) : F1  
  - Special provisions (ADR) : 640C  
  - Limited quantities (ADR) : 5I  
  - Excepted quantities (ADR) : E2  
  - Packing instructions (ADR) : P001  
  - Mixed packing provisions (ADR) : MP19  
  - Portable tank and bulk container instructions (ADR) : T4  
  - Portable tank and bulk container special provisions (ADR) : TP1, TP8  
  - Tank code (ADR) : L1.5BN  
  - Vehicle for tank carriage : FL  
  - Transport category (ADR) : 2  
  - Special provisions for carriage - Operation (ADR) : S2, S20  
  - Hazard identification number (Kemler No.) : 33
Orange plates: 331139

Tunnel restriction code (ADR): D/E

- Transport by sea

Limited quantities (IMDG): 5 L
Excepted quantities (IMDG): E2
Packing instructions (IMDG): P001
IBC packing instructions (IMDG): IBC02
Tank instructions (IMDG): T4
Tank special provisions (IMDG): TP1, TP8
EmS-No. (Fire): F-E
EmS-No. (Spillage): S-E
Stowage category (IMDG): B
Properties and observations (IMDG): Miscibility with water depends upon the composition.

- Air transport

PCA Excepted quantities (IATA): E2
PCA Limited quantities (IATA): Y341
PCA limited quantity max net quantity (IATA): 1L
PCA packing instructions (IATA): 353
PCA max net quantity (IATA): 5L
CAO packing instructions (IATA): 364
CAO max net quantity (IATA): 60L
Special provisions (IATA): A3
ERG code (IATA): 3L

- Inland waterway transport

Classification code (ADN): F1
Special provisions (ADN): 640C
Limited quantities (ADN): 5 L
Excepted quantities (ADN): E2
Equipment required (ADN): PP, EX, A
Ventilation (ADN): VE01
Number of blue cones/lights (ADN): 1

- Rail transport

Classification code (RID): F1
Special provisions (RID): 640C
Limited quantities (RID): 5L
Excepted quantities (RID): E2
Packing instructions (RID): P001
Mixed packing provisions (RID): MP19
Portable tank and bulk container instructions (RID): T4
Portable tank and bulk container special provisions (RID): TP1, TP8
Tank codes for RID tanks (RID): L1.5BN
Transport category (RID): 2
Colis express (express parcels) (RID): CE7
Hazard identification number (RID): 33

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances
Contains no REACH Annex XIV substances

% Volatiles : > 60 %

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : None of the components are listed
SZW-lijst van mutagene stoffen : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : Cyclohexylamine is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark
Class for fire hazard : Class I-1
Store unit : 1 liter
Classification remarks : F <Flam. Liq. 2>: Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal) : Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral) : Acute toxicity (oral), Category 4
Aquatic Acute 1 : Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1 : Hazardous to the aquatic environment — Chronic Hazard, Category 1
Asp. Tox. 1 : Aspiration hazard, Category 1
Eye Irrit. 2 : Serious eye damage/eye irritation, Category 2
Flam. Liq. 2 : Flammable liquids, Category 2
Flam. Liq. 3 : Flammable liquids, Category 3
Repr. 2 : Reproductive toxicity, Category 2
Skin Corr. 1B : Skin corrosion/irritation, Category 1B
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H361f | Suspected of damaging fertility. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2019 Gelest Inc. Morrisville, PA 19067
Gelest Zipcone™ FN

Filler-Free Fast-Cure Pure Silicone Elastomer for Maximum Release

Features: Provides thick film rapid-cure pure silicone elastomers with good adhesion to metals, glass and solvent compatible plastics and fibers. Products are free of abrasive-silica. Systems are high-speed moisture cure.

Applications:
- **electronic devices** - forms a soft conformal coating, free of abrasive silica.
- **rubber and plastic overcoat** - provides a uniform low-roughness coating suitable for release and with an exceptionally smooth touch.
- **supported membranes** - filler-free silicone allows maximum transport of gases.
- **thin film seals and conformable gaskets** - may be applied by dipping or brushing.

<table>
<thead>
<tr>
<th>Capsular Description</th>
<th>Thickness</th>
<th>Cure</th>
<th>Hardness</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>thin-thick</td>
<td>air/moisture</td>
<td>low</td>
<td>solvent-borne 1-part</td>
</tr>
</tbody>
</table>

**Gelest Zipcone™ FN** polydimethylsiloxane RTV for rapid, neutral cure, maximum release

**Description**
Zipcone™ FN is a moisture activated filler-free silicone RTV dispersed in odorless hydrocarbon. In the presence of atmospheric moisture, a condensation of silicone prepolymers occurs. The byproduct of the cure reaction is an amine. Amine byproducts have little or no corrosive effects on most metals, but copper is affected.

**Cured Properties**
- Tensile Strength >50psi
- Elongation >150%
- Durometer, Shore A >5
- Tear Strength >5pli
- Refractive Index 1.403

**Uncured Properties of Zipcone™ FN**
- Solids 32-35%
- Viscosity 100-150 cSt.
- Skin-over time 15 minutes
- Cure time (0.25mm) 2 hours
- Specific gravity 0.81
- Flashpoint 0°C

**Standard Packaging**
- PP1-ZPFN Zipcone™ FN
  - 100g/$28.00
  - 650g/$140.00
  - 10kg/commercial package

**Cautions**
Zipcone™ F series contain flammable solvents and cure released byproducts which are eye irritants. Avoid skin and eye contact. Use in a well ventilated area wearing gloves and safety glasses. Consult MSDS of the specific product used for additional safety information.

**Application Methods**
Zipcone™ F series is applied by dipping, brushing or spin-on. Solvent is allowed to evaporate in an exhausted area. Cure is at room temperature. After opening, containers should be inerted with dry air or nitrogen before sealing to avoid cure in the container.